

# CHAMBERS'S JOURNAL

OF  
POPULAR

LITERATURE, SCIENCE, AND ART.

*Fourth Series*

CONDUCTED BY WILLIAM AND ROBERT CHAMBERS.

No. 820.

SATURDAY, SEPTEMBER 13, 1879.

PRICE 1½d.

## A TOUR IN MOROCCO.

THE foreign policy of England is always in extremes. Sometimes the rage is all for acquisition of new countries; sometimes for giving up distant possessions in a gust of generosity. A few years ago, Corfu was made a present of to Greece, after costing a good deal of money and being in various ways rectified. This was not the first time that a possession in the Mediterranean was gifted away on no rational grounds. The Portuguese ceded Tangier to the English, and after being kept for a length of time, it was given up to the Moors. The result, of course, was that it lapsed into barbarism, and became a head-centre of piracy and slavery. Situated on the coast of the Mediterranean opposite Gibraltar, Tangier might at this day have been a valuable foreign possession; while its occupation by the British would undoubtedly have been beneficial to the wretchedly misgoverned inhabitants.

The Moors while in Spain were far advanced in civilisation. In many things they were certainly in advance of the Spaniards. It is therefore pitiable to know that in their own region, Morocco, they have returned to a state of barbaric stagnation. As not much is known regarding the interior of the country, the appearance, though delayed, of a *Journal of a Tour in Morocco and the Great Atlas*, by Sir J. D. Hooker and his companion Mr John Ball (London: Macmillan and Co., 1879), is as acceptable as the *Journal* itself is interesting.

These gentlemen travelled in Morocco in 1871, their special object being to visit the Great Atlas, a mountain range of which little is known. Obligated to wait some few days at Tangier for the autograph letter from the Sultan, without which it would have been dangerous as well as impolitic to attempt to travel beyond the limits assigned to consular protection, the travellers spent the time not unprofitably in obtaining from Sir John Drummond Hay that information about the country which from his long residence he is so well qualified to give, and in making botanising

excursions to Cape Spartel, Tetuan, Beni Hosmar, and Ceuta; and on the 20th of April, having obtained the important document, were able to take their departure by French steamer for Mogador, touching at one or two small ports on their way thither.

Although there is much to interest the reader in Mr Ball's preliminary pages, we need not linger over them, since the real excitement of the journey may be said to commence from the moment when El Hadj Hamara, the governor of Mogador, reverently applies to his forehead and then breaks the seal of his master's letter, and learns that he is to forward the English *hakim* and his companions to the care of 'the slave' El Graoui, to whom orders have been sent as to what he is to do; and proceeds to carry out these very curtly conveyed instructions, which, however, were still further enforced by the arrival of a courier from the Sultan's eldest son, the viceroy of the southern provinces, with orders to take every care for the safety and comfort of the travellers during their journey to the capital. It may be as well to mention that 'the slave' El Graoui was no less a person than the governor of that portion of the Great Atlas subject to the Sultan's authority; a stout man of completely black complexion, whose broad countenance gave the impression of considerable energy, with an habitual expression of good-humoured ferocity—a person upon whose assistance must depend entirely the failure or success of the expedition. By cleverly taking advantage of the rivalry which subsisted between him and the governor of Morocco, Sir J. D. Hooker effectually managed to secure his friendly intervention so long as it was needed; and he gives us many amusing instances of the form in which official protection displays itself in this country. For instance, a representation having been made by Mr Carstensen, the British vice-consul at Mogador, to the effect that horses and mules for riding, together with numerous baggage animals, would be required, an order had gone forth a week before the arrival of the party that no horses or mules should be sold or hired until

such as were needed had been selected; and a complaint having been made that some brass-work ordered from a certain skilful craftsman had not been executed within the time specified, the artisan was at once thrown into prison, and a soldier placed over him to see that he did no other work than that promised to the English strangers.

Wherever the travellers turned, not only were houses placed at their disposition, but a considerable *mona* or food-offering was literally laid at their feet at each resting-place. This *mona* indeed must have been, owing to the shameful rapacity of the native escort, a terrible burden upon the people, especially the poor mountaineers, consisting as it did of large numbers of sheep and fowls, with bread, tea, loaves of sugar, French candles, eggs, butter, honey, corn for the horses and mules, and dishes of barley-porridge and *kes koussou*. But the order having gone forth from the Sultan that the travellers were to be put to no expense whatever, they were powerless to prevent the exaction, and could only recognise the justice of the request that they should not make a long stay in the higher valleys, where the population was not rich enough to be able to support them for any length of time, although the reputation of Hooker as a distinguished and successful *hakim* caused him to be everywhere received with favour, and followed by crowds of suffering people.

A curious difficulty presented itself at the outset; namely how to assign for the expedition an object which should be in any way intelligible to the Moorish mind. 'We were well aware,' says Mr Ball, 'that anything so simple as the statement that the object was to gratify our curiosity as to the vegetation of the Great Atlas, would at once be set aside as a false pretext, intended to cover some sinister design. That one man should be crazy enough to make a long journey for such a purpose might have been thought within the range of possibility; but to suppose that three should all at once be smitten with such a form of insanity, was plainly too ridiculous. To endeavour to explain that Hooker, as Director of a great national establishment, such as Kew Gardens, should be anxious to enrich it by the introduction of new, rare, or useful plants, was not likely to be more successful;' so they hit upon the idea of stating that the Sultana of England had wonderful gardens, in which were plants from all countries of the world excepting the Great Atlas, and that she had sent Hooker and his assistants to collect and send home whatever they could find there. But this suggestion was entirely objected to on the ground that a powerful sovereign must not occupy herself with anything so frivolous as a garden; her thoughts must be with her government and with her fleets and armies!

It was, however, conceded that the acquisition of *medical* plants might be a worthy object of desire; and Hooker having accordingly stated that his mission had especial reference to these, the received version of the affair came to be that the Sultana of England had heard that there was somewhere in Morocco a plant that would make her live for ever, and had sent her

own *hakim* to find it for her; so that when the botanists were observed to undergo rather hard labour, the commentary always was: 'The Sultana of England is a severe woman, and she has threatened to give them stick (*bastinado*) if they do not find the herb she wants.'

After much consideration as to the direction their journey was to take, which, owing to the difficulty of obtaining reliable information about the country, was by no means an easy matter to decide, it was resolved to push forward into the interior, and try to reach the head of the valley of the Tessout—the main western branch of the Oum-er-bia—lying probably about one hundred and twenty miles due east of the town of Morocco, as by this means it was thought that the easiest approach to the higher portion of the Great Atlas would most probably be found. Accordingly, having obtained from El Graoui letters to all the Kaid of the valleys extending from Tasseremout to the borders of Haha, as well as to the governor of Demenet, and taking with them three small tents, a considerable amount of baggage, and several attendants, besides an escort of nine privates and two officers, the party—now forming a procession of thirty-seven men and thirty-three horses and mules—slowly defiled through the filthy lanes of Morocco, and left the city by the south-east gate, on what must have indeed been an expedition of most exceptional and quite absorbing interest.

Looking at Mr Ball's new map of Southern Morocco—upon which, by the way, it is a pity that the travellers' route is not indicated with more distinctness—we see a grand chain of mountains, rising it is said to a mean height of twelve thousand two hundred feet for a distance of eighty miles, thus surpassing any other of equal length in Europe or in the countries bordering on the Mediterranean. Of this chain the travellers first gained the summit ridge—much to the disgust of their guides, who did all they could to hinder them from making the ascent—in the midst of a snow-storm of such violence that it was almost impossible to face it, and were of course unable on that occasion to do anything but return as quickly as possible to a less inclement region. The appearance of the party was, says the writer, most singular; faces of a livid purple were inclosed by masses of hair thickly matted with ice; and the beards, frozen in the direction of the wind, projected on one side, giving a strangely distorted expression to each countenance.

On another occasion, when they ascended the Djebel Tezah mountain, they were fortunate in a cloudless sky, and the white mantle of snow had also almost entirely disappeared. This time they were able to study the grand panorama, and to take careful note of every object presented to their view. Looking towards the south, at a distance of fifty or sixty miles rose the range of the Anti-Atlas, shewing a wavy outline with rounded summits, the highest portion being a few degrees west of south; and between these and the summit where they were, lay the Valley of Sous, represented as 'the proper home of everything strange and marvellous in the empire;' a region, however, which religious fanaticism now guards with especial rigour. In the sixteenth century, Tarudant, its capital, was a large and flourishing city, resorted to by English and French merchants; while in the

present day the single English traveller Mr Jordan, who has succeeded in reaching it, was only saved from death by being immediately sent away by the governor, and ordered to put as wide a space as possible without loss of time between himself and the fanatical city.

To return to the summit of Djebel Tezah. Looking to the east-north-east and east-south-east, massive buttresses stretch away from the main chain of the Atlas, some probably surpassing the height of thirteen thousand feet above the sea-level; while more to the north was beheld a remarkable isolated mass, forming a bold promontory. On a platform of level ground a few feet below the summit were about a dozen rude stone buildings, probably intended as shelter for herdsmen who in summer drive their flocks to this lofty region. On some of the lower parts of the mountain, trees of the bellot oak (*Quercus ballota* of Desfontaines), of great age, and having thick trunks, are still to be found, the remains probably of forests which once clothed its flanks.

The impressions which the travellers derived of the outer region of the Great Atlas were very agreeable. They found the country populous and fertile; and though but little space existed for tillage, olives, walnuts, and the Indian fig grow luxuriantly, and afford a considerable amount of sustenance; while the destructive practice of setting fire to the brushwood in order to obtain scanty pasturage for sheep and goats, is the only cause which prevents the northern slopes from being clothed with valuable timber. The *Callitris*, which under the name of citrus-wood obtained such an extravagant price in the days of imperial Rome, might easily become a source of wealth, for the beauty of the wood would secure a ready market, were the trees, of which small specimens are abundant, allowed to attain a sufficient size. At present, the only use made of them is the production of gum-sandarac, a small quantity of which is exported to Europe. The *Juniperus Phœnicea* appears to possess some medicinal quality, since a kind of tar is made from it, which is found to heal the sores of men and animals. All attempts to discover the Morocco gum-ammoniac plant proved to be fruitless. The Moors called it Kileh, and stated that it is to be found at some distance north of Morocco city. The gum-arabic plant grows principally about Demenet, and is said to be the *Alk Tlah*, the *Acacia gummifera* of Willdenow; but unfortunately at the time of the expedition neither the flower nor fruit of it was procurable.

Undoubtedly, the most remarkable vegetable production of Morocco is that singular tree *Argania sideroxylon* or Argan, first introduced to us by Leo Africanus, and which is so much valued on account of its oil, as well as for its fine-grained timber of singular hardness; while the husks of the fruit provide such excellent food for camels, goats, sheep, and cows, that the countryman going into the woods to collect Argan nuts invariably takes his herd with him, that they may feed upon it while he is separating the nuts from their green envelope. To extract the oil, the shell is first broken and the nut afterwards roasted like coffee, ground in a hand-mill, and kneaded with a small quantity of hot water. The Argan tree, which in growth has a resemblance to the olive, is confined to a very circumscribed area of

Morocco. It presents at times a most curious appearance, as goats are so fond of the nuts that they will climb in search of them almost to its topmost branches. And Mr Ball gives us a sketch of one or two venerable specimens, loaded with these scansorial quadrupeds, who seem to be enjoying themselves to their hearts' content.

In his chapter on the resources of the empire, the writer says that it is difficult on this subject to say too much. With an almost unequalled climate there is scarcely any one of the productions of the warmer temperate and subtropical zones that may not here be obtained. Already the country supplies large quantities of olive-oil, dates, oranges, and almonds, with a little cotton; and the esparto grass now so largely consumed by paper-makers is exported from the province of Haha. The supply of cotton of course might be largely increased; and there seems to be no reason why coffee, tea, sugar, indigo, and other valuable exotic produce should not be raised, if the deficient rainfall were supplemented by increased irrigation. There is, however, one difficulty less easy to surmount—namely the frequent inroads of the destroying locust, against which, up to the present time, no effectual means of defence has been discovered.

Necessarily in many respects superficial, from the very limited time the exploration lasted, the work yet throws considerable light on the condition of the country, shewing not merely its misgovernment, but the absolute stagnation of everything, even where, as in many cases, actual deterioration is not self-evident; and one cannot help agreeing with Mr Ball when he says that with an effete race, corrupted by luxury, who have lost the spirit, but preserved many of the traditions of a decayed civilisation, no improvement can be expected; and that the best chance for Morocco would be that it should pass under the control of a civilised state, strong enough to overcome speedily the inevitable resistance of the Moorish ruling class, and advanced enough to consult the welfare of the people it undertakes to govern.

## THE BRAVE SWISS BOY.

### CHAPTER II.—A PERILOUS ADVENTURE.

It was still early in the day when Walter left the cottage a second time. His heart was cheerful, and his movements light and rapid. Instead, however, of taking the road leading to the inn, he struck off in a zigzag path through the valley towards the Engelhorn, whose jagged and lofty peaks rose far up into the blue sky. After a short time he reached the large and splendid glacier that lies between the Engelhorn and Wellhorn, cast a hasty glance at the beautiful masses of ice burnished to prismatic brilliancy by the morning sun, and then turned to the left towards a steep and narrow path leading to the summit. As the road grew more difficult at every step, his progress became much slower, and he purposely reserved his strength, knowing well that it would be severely taxed before he gained the object of his journey. After a toilsome ascent of half an hour he reached the lofty crag called by the moun-

taineers the Warder of the glacier, and sat down to recover his breath.

It was very necessary for him to take a little rest; for the way he had come, although long and tiring, was as child's-play compared with the difficulties he had yet to overcome. He had to climb the steep and dizzy heights that towered above his head; and instead of walking along a narrow footpath, he would have to clamber over rocks and loose stones, to pass close to the most dreadful precipices, and across foaming mountain-streams, till he reached the height at which the refreshing green disappeared, with nothing visible but huge masses of brown and gray rock; where no other sight met the eye but that of mountain tops covered with perpetual snow and ice—a world dead and deserted, where the familiar voices of nature were almost unknown; where no bird carolled its love-song from the waving branch; where no sound was to be heard save the muttered thunder of the avalanche, the roaring of the cataracts which poured forth from the melting glaciers and made courses for themselves through heaps of rough stones; and now and again the harsh and discordant scream of a solitary vulture that with outspread wings circled slowly aloft, piercing into the valleys with its keen eye in search of prey. Into these wild and lonely regions Walter had to climb in order to reach the lofty crag whereon the vulture—the far-famed Lammergeier of the Alps—had reared her eyrie.

But these difficulties had little terror for the cool-headed and brave-hearted mountain youth, who had from his earliest days been accustomed to roam on dizzy heights where the slightest false step would have been destruction. He was determined to finish what he had begun; and gratitude to the noble and generous stranger lent new courage to his soul, and strength and endurance to his frame.

After a short rest he jumped up again, and renewed the toilsome ascent, following slowly but steadily the dangerous track that led to the summit of the mountain. His feet often slipped on the bare and polished rock; sometimes he slid ten or twenty paces backwards over loose pebbles, and anon sank knee-deep in the snow which here and there filled the hollows; but nothing daunted him or caused him to waver from his purpose. At last he reached a broad sheet of ice with innumerable crevices and chasms, on the further side of which a narrow ridge like the edge of a knife stretched above a wild and lonely valley, the base of which yawned two or three thousand feet below. At the extreme end of this ridge the nest he was in search of was built on a small point of rock, the sides of which descended precipitously into the depths below.

With his eye fixed on the distant crag, Walter commenced the passage of the ice-field. The utmost caution being necessary at every step, he felt carefully with his long staff to ascertain whether the snow that covered the icy mass was fit to bear his weight, or only formed a treacherous bridge over the numerous ravines which yawned beneath. Bending his way round the large chasms, he leaped easily over the smaller ones with the aid of his staff; and after

avoiding all the more dangerous spots, he succeeded, by caution and presence of mind, in safely reaching the further side of the glacier, where the last but most perilous part of his journey was to begin.

As he stood there leaning on his alpenstock, out of breath with the exertion he had undergone, and surveyed the fearful path which scarcely any human foot had ever dared to tread; as he cast a glance at the dizzy precipices which yawned on each side of the ridge, which was itself in many places scarcely a foot in breadth; as he considered the inevitable destruction that would follow a single false step, he began to feel his courage fail, and lost for a moment the confidence and contempt of danger which had filled his soul an hour or two before, and sustained him during his perilous journey. 'What if I should never return, nor see my father again?' said he to himself, as he drew back from the road which seemed to threaten him with destruction. 'Is it not too great a risk to run?'

But these fears only lasted a few moments. He called to mind the generosity of the stranger, and pictured to himself the delight with which he would receive him if he returned laden with such valuable booty; and his determination was renewed on the spot.

'I should be ashamed ever to look him in the face again,' said he to himself; 'and what would father say if he were to see that I was afraid of climbing a few rocks? No, no! I must and will have the birds; so here goes!'

Laying his alpenstock on the ground, he took off the thick jacket and heavy shoes which would but hinder his progress, and with only his shirt and trousers on, an axe in his belt, and the game-bag hung over his shoulder, he started forwards with all his former courage and energy, to complete the dangerous undertaking.

His progress was not difficult at first. The ridge along which he had to go was broad enough to begin with, although very rough and wild here and there. But after he had gone a little way, it got so narrow that he found it difficult to secure a foothold. At this point the ridge became so attenuated that the youth saw at the first glance that it was impossible to proceed in an upright position; he therefore crept along on all-fours, or sat astride the ridge and urged himself on with his hands and feet.

Thus, with extreme difficulty he pursued his perilous way towards the end of the ridge on which he knew the eyrie was built. But presently he saw the nest and could hear the young birds piping, which gave him new strength and determination. At this juncture a loud scream overhead caused him to look up, and he was alarmed to see the female vulture wheeling round the nest with a young goat in her talons. With this new danger menacing him, the young cragsman lay flat down on the rock, and remained motionless, while he offered up an earnest prayer to heaven that the bird might not discover him. He knew the peril which threatened him, for he had often heard of the fury with which the vulture attacks any one who attempts to rob its nest. He had heard of many cragsmen who had lost their lives in that way, and his own position was by no means the most favourable to defend himself against attack. His short and earnest prayer was not in vain.



The young birds screeched louder and louder as they saw the prey in their mother's talons; and after the vulture had further tempted their appetite by one or two more majestic sweeps, she dropped the dainty morsel into the nest, where it was at once seized. After assisting her young ones to make a good beginning of their meal, the mother bird unfolded her powerful wings, and glided into the valley beneath with the speed of an arrow.

'Heaven be thanked, I am saved!' murmured Walter as he rose from his uncomfortable position and wiped the perspiration from his forehead. 'I must lose no time now, or perhaps one or both the old birds may return.'

He pressed on with redoubled energy till an event occurred, unimportant in itself, but which caused him some uneasiness, and reminded him of the need of caution. The rock in places was fragile and split up by the weather, and with a slight touch of his foot he loosened an immense fragment of stone, which went rolling down the side of the mountain till it reached a projecting ledge hundreds of feet below. A pang of terror shot through the boy's heart, and his face blanched, as he watched the stone thundering over the obstacles in its way until it disappeared in a cloud of dust. It seemed as if the whole mountain trembled beneath him; a mist bleared his eyes; and as the blood rushed to his head, a deadly giddiness threatened to overpower him. He felt an impulse to throw himself over, which he could scarcely resist; and it was only by falling on his face and shutting his eyes, that he recovered his presence of mind. After thus lying for several minutes with beating heart and quaking limbs, until by degrees he became more at ease, he ventured to look around him once more, and fixed his eyes on the nest, which was now only about fifty paces farther on.

After waiting a few minutes longer, to be sure that his courage had returned, he made a fresh start, determining not to allow anything to alarm him again; and soon reached the end of the ridge, and viewed the nest with the young vultures before him. But here still another difficulty presented itself. The rock, which up to this point had been quite level, rose at the extreme end about eight feet above the ridge, and formed a sort of projecting platform, which the parent birds, with their wonderful sagacity, had deemed the most suitable spot on which to take up their abode. As he measured the height with his eye, Walter began to fear that after all he would be obliged to return without accomplishing his object, for the rock was so smooth as scarcely to afford the least hold to either his hands or feet. Fortunately, however, he recollected his little axe, which might do him good service if the stone, as he hoped, proved soft. Raising himself cautiously, he drew the axe from his belt, and while supporting himself with the left hand, dealt the rock several vigorous blows with the right, and to his great delight succeeded in making notches, by which, if he only went carefully to work, he could accomplish his object.

With renewed courage he clambered up the almost perpendicular rock, and his curly hair and sun-burnt face soon appeared above the edge of the nest. The next moment he leaned over, seized the young birds in spite of their angry

cries, transferred them one after the other to his bag, and throwing it across his shoulder began to return on the dangerous road by which he had come. In common, however, with the experience of all who have ascended precipitous heights, he soon found that going down was much more difficult than had been the coming up; but ignoring the fact that he had beneath him a precipice two thousand feet deep, he devoted all his attention to the work immediately before him, and carefully descended the rocky wall step by step, till he reached the level ridge once more. He then turned slowly round, slung his bag in front of him, and leaning back against the wall, surveyed the giddy road which he must traverse to reach the glacier and the steep declivities of the Engelhorn, and thereafter his native valley.

It was a difficult and dangerous road; but the young mountaineer's heart was now full of joy and confidence, for he had surmounted the greatest difficulty, and the prize of his bold and daring venture was in his possession. He uttered an exclamation of triumph; then, thanking God for the help he had received, he implored the Divine protection on his homeward journey. The sharp ridge made it necessary for him, as before, to work his way forward astride on the rock for some time; but he soon got within sight of a part where it would be possible to go on his hands and knees, and was just about to exchange his striding position for the more comfortable one of crawling, when the constant shrieking of the young vultures in his bag was answered by a piercing cry from above, followed the next moment by the loud rushing of powerful wings close to his ear. The boy uttered an exclamation of horror, and clung with all his might to the rock to prevent himself from falling.

In an instant he perceived the fearful danger that threatened him. One, or perhaps both the old birds had been attracted by the cries of the young ones, and were about to avenge themselves on the robber of their nest. Walter guessed that a hard fight would probably take place, and his first impulse was to throw the bag with the young birds into the valley beneath, and then try to make his escape as well as he might. But he soon found that this plan was more readily formed than it could be executed; for before he could make a single movement, he felt the blast of the wings just above his head, while the screaming of the enraged bird so confused his senses, that he had great difficulty to avoid being hurled from his narrow resting-place into the ravine below. This sudden danger, although it alarmed him for the moment, awoke the next moment the courage and determination of the brave-hearted boy. It was a case of life or death, and it was vain to think of retiring from the contest. So, snatching his axe from his belt, he aimed a powerful blow at the old vulture as she swept down upon him for the third time. He succeeded beyond his expectation, for the blow, made almost at random, struck the wing of the bird, which, after vainly attempting to continue the struggle, fell helplessly into the abyss.

Relieved of his antagonist, Walter felt completely exhausted, and was obliged to lie down at full length for several minutes until he regained his breath and self-possession. He then made the best of his way along till he reached the steep

road leading to the glacier, and had got about half-way down, when just in the most dangerous part, he heard the ominous scream again, and saw with a shrinking horror that the male vulture, attracted, like its mate, by the continued cries of the young birds, had discovered him. In a fury of rage the angry bird darted downwards, and sweeping past with outstretched talons, tried to hurl him headlong from the crag.

In this dreadful crisis, Walter pressed as hard as he could against the rocky crag, having but one hand at liberty to defend himself against the furious attack of the bird. It was quite impossible for him to get at his axe; and the force with which he was menaced, caused him nearly to let go his hold. He tried to seize the vulture's throat and strangle it; but the bird was too active, and made all such attempts perfectly useless. He could scarcely hope to continue such a dangerous struggle much longer. He was becoming faint from terror, and his left hand was fast growing benumbed with grasping the rock. He had almost resigned himself to his fate, and expected the next moment to be dashed to pieces on the field of ice beneath. Suddenly, however, he recollected his pocket-knife, and a new ray of hope dawned. Giving up the attempt to clutch at the furious bird, he drew the knife out of his pocket, and opened it with his teeth, and aiming two or three blows at the creature's breast, he found at last that he had been successful in reaching some mortal part. The fluttering of the wings ceased, and the dying bird stained the virgin snow with its blood on the ice-field below. Walter was saved—there was no other enemy now to fear—his life was no longer in danger; but his energies were taxed to the utmost, and it was well for him that the terrible contest had lasted no longer.

Pale, trembling in every limb, and spattered with the vulture's blood as well as that which trickled from the many wounds he had received, the valiant young cragsman sank helplessly to the ground, where he lay for some minutes, stunned with the terrible exertion he had gone through. At length, however, he so far recovered himself as to be able to continue his fatiguing and dangerous journey, and soon succeeded in reaching the spot where he had left his jacket, shoes, and alpenstock. Having gained a place of safety, he poured forth his thanks to God for delivering him from such great danger, and began to bind up his wounds, which for the first time were now paining him. When this was accomplished in a rough and ready sort of way, he had a peep at the trophies in his bag, whose capture had been attended with such adventurous danger; and with the aid of his alpenstock succeeded in getting the dead body of the old bird, which he found had been struck right to the heart. But his knife he could not recover, so concluded that he must have dropped it after the deadly encounter.

'That doesn't matter much,' said he to himself, as he looked at the size of the bird. 'It is a good exchange; and if I give the stranger the old bird with the young ones, I daresay he will give me another knife. What a splendid creature! Fully four feet long, and the wings at least three yards across. How father will open his eyes when he sees the dead *Lammergeier*—and the Scotch gentleman too!'

Tying the legs of the bird together with cord which he had fortunately brought, he slung it across his shoulder, to balance the weight of the bag; and then started on his journey across the glacier, the foot of which he soon reached, and was then within hailing distance of the hotel where the stranger was residing.

It was a good thing that he had not been kept longer away, for the sun was beginning to set by the time he reached the valley, and only the highest peaks were lit up by its departing glory. Tired and hungry, Walter was thankful to find himself once more at the door of the inn, where there was the same crowd of travellers, guides, horses and mules he had seen in the morning. His appearance had attracted general attention as he descended the last hill leading to the hotel.

'Why, I declare it's Watty Hirzel!' exclaimed one of the guides. 'He was here this morning, and I declare he's got a young eagle hanging across his shoulder.'

'Say an old vulture, Mohrle, and you'll be nearer the mark,' replied the lad in a cheerful tone and with sparkling eyes; for he felt so proud of the triumph he had achieved, that all fatigue seemed to be forgotten. 'An old vulture, Mohrle, and a splendid fellow into the bargain! I've got the young ones in my bag here.'

'You're a pretty fellow!' said another guide, with a sneer. 'I suppose you mean to tell us that you've killed the old bird and carried off the young ones?'

'Yes; that is just what I mean to tell you,' replied the boy, smiling, and paying no attention to the sneer of the other. 'I've done it all alone. I took the youngsters out of the nest, and had a regular fight with the old ones afterwards. I brought one of them home; but the other you will find somewhere in the Urbacht Valley, if you like to go and look for it.'

'I think the lad speaks the truth,' said Mohrle, gazing at Walter with astonishment and respect. —'You've had a long journey, my boy, and you're covered with blood. Did the old vulture hurt you?'

'Yes; the brute stuck his claws into me, and if I hadn't had a sharp knife in my pocket, it would have been all over with me. But let me through, for I want to take the young birds up-stairs to a gentleman here.'

Mohrle and the other guides who had surrounded the courageous boy would gladly have detained him longer to hear all the particulars of his daring adventure; but he pressed through the crowd, promising to tell them all about it afterwards, and made his way up to the room occupied by Mr Seymour, who received him with as much astonishment as the guides had done.

'There sir,' exclaimed Walter, as he took the young vultures out of his bag and laid them on the floor—'there are the birds you wanted; and here is one of the old ones which I brought with me from the Engelhorn. But you must let them have something to eat—the live ones, I mean; for they've had nothing for nearly a whole day, and are squealing for hunger.'

Mr Seymour stood for a moment speechless. He was filled with delight at the sight of the young birds he had so long wished for, but was at the same time dumfounded at the courage and honour of the young mountaineer.

'Is it possible?' he exclaimed at last. 'Have you really ventured to risk your life, although I told you that I didn't want the birds?'

'Well sir, I know you said so; but I saw by your face that you would like to have them all the same; and so, as you had been so kind to me, I didn't mind running a little risk to please you, although it was hard work. So there they are; but you mustn't forget to feed them, or they will be starved to death before the morning.'

'Oh, we will take good care that they don't die of hunger,' replied Mr Seymour, ringing the bell. 'I think, as you take such a warm interest in the welfare of the birds, you must feel rather hungry yourself. So sit down and have something to eat, and then you can tell me all about your adventure.'

When the waiter came, some raw meat was ordered for the fledglings—which were presently safely housed in the stable-yard—and a good dinner for Walter, who, aided by Mr Seymour's encouraging remarks, did justice to a meal the like of which he had never before seen—a finale which was to him by far the most agreeable part of his day's work. Then the lad commenced, in simple language, to describe all that he had gone through, which, while it pleased his host thoroughly, caused him to feel still greater surprise and admiration at his young friend's unaffected bravery and presence of mind.

'You have performed a brave and daring action,' said he, when Walter had finished his story. 'I should call it a rash and fool-hardy adventure, had you not been actuated by a noble motive in carrying it out. A feeling of gratitude inspired you, and therefore God was with you, and preserved you. But tell me, boy, how is it that you had courage and resolution enough to expose yourself to such a frightful risk?'

'Well sir, I can't say,' replied Walter thoughtfully. 'All I know is that I was determined to do it, and that is enough to help one over a great many hard things. At the very last, when I was attacked by the second vulture, and might have been easily thrown down the rocks, the thought came into my mind that you must and ought to have the birds; and then I recollected the knife in my pocket, which settled the business. Yes; that was it sir. You had been so generous to me, that I made up my mind to fight it out; and there's the end of it. I couldn't think of being ungrateful after so much kindness.'

'Well, my lad, you have proved most clearly that you have a thankful heart and a cool and determined head,' said Mr Seymour, not without emotion. 'Maintain these characteristics, and use them always for good and noble purposes, and I am sure you will find the end of every adventure as satisfactory as this has been to-day. I owe you a new knife and a suit of clothes; for the old vulture that has used you so badly was not in our bargain this morning. But we will talk about that another time. You had better go home now; for I think your father will begin to feel anxious about you, as it is getting late. I will come and see you in the morning.'

Walter left the room in great glee. He stopped a few minutes in the court-yard to tell the impatient guides what he had gone through, and then hurried home as fast as he could, where he found his father waiting for him with some impatience.

'Everything is settled, father!' he exclaimed, as he clasped him round the neck. 'We shall get our cow back again now; for I've got the money, and neighbour Frieshardt can't keep her any longer. I've brought it with me from the Engelhorn!'

The peasant could scarce believe the hurried words of the excited boy, and was afraid his head was turned, until Walter opened the little cupboard where he had put the money, and laid the two bright gold pieces on the table. There was no longer any room for doubt; and the poor man's eyes sparkled with delight as he looked at the sum which was just sufficient to pay his debt and rescue the cow from the hands of his neighbour. 'But how did you come by all this money, Watty?' he inquired. 'I hope you have got it fairly and honestly?'

'Yes; quite honestly, father,' replied the boy with an open and exultant smile.

'Well, tell me— But no; I must go and get Liesli out of prison without a moment's delay. Come along with me to neighbour Frieshardt's, Watty.'

Away went the happy pair to the neighbouring farm-house; and although Frieshardt looked sullen and displeased when Toni Hirzel laid the gold pieces on the table, it was no use for him to offer any resistance; so he went rather sulkily to the cow-house, and let out the captive animal, which was followed home by the peasant and his proud son, and got a capital supper in her old quarters. When this important business was accomplished, Walter repaired with his father to the little cottage again, and for the third and last time that day related all the adventures he had gone through.

'Thanks be to God that He has watched over you, and brought you safely home again!' exclaimed the father, who had listened with a beating heart to his son's story. 'It is a great blessing that we have got the money, for my cousin couldn't lend me any. But now promise me faithfully, youngster, that you will never go on such a dangerous errand again without speaking to me about it. It is a perfect miracle that you have come back alive! We have good reason to be thankful as long as we live that you didn't miss your footing or get killed by that savage vulture. But what I wonder most at is that you could muster up the pluck for such a risky business.'

'Well, father, I did it for you, and so that we could get poor Liesli back again,' replied the boy. 'We could never have got on without the cow; and as the Scotch gentleman had been so kind to me, I made up my mind to get the young birds for him, and thought nothing about the danger.'

'I am very glad you have been so successful,' said his father; 'but never forget that your success is owing altogether to God's help, and don't forget to thank Him with all your heart for His watchful care.'

'I'll be sure not to forget that, father,' was the boy's reply. 'I know that the greatest courage is of no use without God's blessing; and I prayed for help before I set out, and several times afterwards.'

'That was right, Watty. Never forget God, and He will always be with you, and protect

you all your life long. And now, good-night, dear boy.

'Good-night, father,' replied Walter heartily; and both retired to their humble beds, and were soon wrapped in deep and healthful slumber.

#### A CORNISH CAIRN.

In various parts of Great Britain, but more especially in the south-western counties of England, are scattered certain mounds of varying size, which, to many will seem to be natural eminences. On investigation, however, these are found to be what are termed sepulchral mounds, or in other words, the burying-places of human beings who died ages ago. Up to comparatively recent times, little was known respecting these mounds or barrows, which, with superstitious veneration, were allowed to remain untouched by the spade or plough. Modern science, however, combined perhaps with a certain curiosity, has set people to work to ascertain the contents of these curious structures, resulting in 'finds,' which from their nature, are looked upon with the greatest interest both by antiquaries and the general public.

The articles found in these sepulchral mounds are for the most part stone coffins, or cists as they are termed, inside which are frequently deposited earthenware urns, containing the burned ashes of the dead. Beside these remnants of mortality are sometimes scattered beads, axe-heads (celts), bronze implements, and articles for adorning the person, collections of which are to be found in our museums. The opening of a barrow, it will thus be gathered, is looked upon by those more immediately interested as an operation not only curious in itself, but likely to be followed by the discovery of articles of pre-historic value. With this introduction we will proceed to say a few words concerning the opening of what our contributor terms a Cornish Cairn.

The pre-historic folks who built the recently opened cairn on Bollowall Cliff, St Just in Penwith, certainly had an eye to a grand prospect, for it would be hard to find a grander along the whole Cornish coast. Cape Cornwall and Cairn Gluze (the gray rock) to right and left; and southward, cape after cape, and then the long sweep of Whitsand Bay, flanked by Pen-maen-dhu (black stone head), beyond which projects the Land's End.

The cairn of which we speak is seventy feet across the outer, and more than thirty across the inner diameter. It must have resembled two huge domed or 'beehive' huts, one inside the other; both the outer and inner walls presenting a well-finished regular facing, and the space between the two being filled in with earth and rough surface stones. It was the abundance of these surface stones, so unlike the angular *débris* of mine-workings, which led an experienced miner to suspect there was something worth exploring in this heap, which struck him as distinct from the mine-rubbish with which the greater part of the cliff is covered. Fortunately, a namesake and descendant of the famous Cornish antiquary Dr Borlase looks on all local archaeological work as his by inheritance. He has had the barrow carefully and thoroughly opened; and moreover, has taken care that portions of the inner and outer walls, and

two at least of the cists, shall be preserved in the state in which they were found.

When this interesting barrow or cairn was opened, the inner space was found to contain several cists, in all of which were urns, or fragments of urns, of very rude badly baked pottery. These were full of ashes and bits of charred wood. Not a trace of metal was found, nor in fact anything except a few round stones, one large stone bead, and seven very curious glass beads. Besides the cists, there was a central burning-place covered with a layer of ashes. The space between the inner and outer walls contained a number of cists with urns just like those found in the inner ring. The place was apparently used for the successive interments of a tribe—possibly that tribe whose pah or fortified village was the neighbouring cliff-castle of Kenidzack. The entrance to the central burning-place may have been kept open till the whole available space was filled with cists; it was then, we may suppose, walled up, and the outer wall gradually raised as the inter-space also got filled with cists.

Despite the poverty of the 'finds,' the barrow is, from its size and mode of construction, one of the most remarkable ever opened in West Cornwall. The face of the outer and inner walls strongly resembles the very peculiar work seen in the fogos or underground chambers, of which there are several in the neighbourhood; in both, the corners are rounded off, and the dome-shape preserved in precisely the same manner. Its age is of course uncertain, for no one knows how late archaic customs may have lingered on in this corner of the land. Bronze was very rare in West Cornwall in the days when men burned their dead and placed the urns in cists covered with huge barrows or cairns. Moreover, Canon Greenwell, in his interesting book on British Barrows, shews it to have been as rare among the early dwellers on the Yorkshire wolds. Only here and there in England is much metallic wealth found in primeval burying-places.

It does not, however, need the excitement of rich 'finds' to interest most people in opening a barrow. Every chip of flint, every rolled pebble, sets workers and onlookers on the *qui vive*. Every half-inch of charcoal seems to tell its share of the story. And when, after heaps of rubble have been thrown out, a small flat stone is laid bare, and then another joining it, the two forming the broken capstone of a stone coffin, the excitement is intense. The handling of an unglazed half-baked urn is a delicate operation, for it sometimes happens that when it is all but disengaged from the earth around, the frail vessel falls to pieces at a touch. One very large urn now in the Penzance Museum, was successfully put together after being shattered into small bits, because its discoverer, fearing a catastrophe, chalked zigzag marks all over its surface before he allowed the workmen to lift it up; the marks served as guides to himself and his wife in the work—a labour of love, but a great labour nevertheless—of piecing it together again.

The glass beads of course have given rise to much discussion. Everybody in West Cornwall believes in the close alliance which in former times existed between the Cornishmen and the Phœnicians. The latest historian of Penzance tells us that their sailors used to wear 'the



flowing garments of the East.' You encounter the Phœnicians while sharing Cornish hospitality; praise the Devonshire cream, and you will at once be stopped by the gentle but firm assertion that it is not Devonshire, but Phœnician. And though sceptics may sneer, the West Cornishman will still believe in his Phœnicians. Be that as it may, the intelligent tourist will do well not to leave the neighbourhood without seeing Bollowall barrow.

[Since this was written, the excavation has been completed. 'Many more cists have been found, containing more than a hundredweight of broken pottery. A gallery, roofed with huge slabs, has been opened on the south side of the outer circle. Such a gallery exists at the Burgh of Eagus at Newtown on the Boyne. Under the centre space described above, has been found a grave, dug in the rock, containing much black unctuous earth and charred wood. To the sober archaeologist the barrow is far more interesting than it was some months ago; but alas, the glass beads on 'being tested proved to be of highly glazed clay, to the confusion of the Phœnician theory! The way in which the work has been done is most creditable. Too often such remains are recklessly destroyed—rifled of their contents, and then levelled or carelessly covered in. We have known several instances of so-called giants' graves broken up for farm-buildings! It is fortunate that Bollowall cairn has been rescued by the same hand which has just lately restored the St Just *plan-au-quare*, amphitheatre for miracle-plays, about which we may perhaps by-and-by say a few words.]

## HER FATHER'S DAUGHTER.

## IN FOUR CHAPTERS.—CHAPTER I.

THE scene is a prettily furnished sitting-room in Bloomsbury Square, London, and the time nine A.M. on a bright spring morning. Two young people—husband and wife evidently—are seated at breakfast; but the meal is so far advanced that they have both turned to their newspapers, or rather to the one paper, which they have divided between them. She, strange to say, is immersed in the City article of the *Morning Clipper*. He is fuming to himself over a critique on the new comedy produced last night at the Variety Theatre. She is a handsome blonde of two-and-twenty. He is a tall, thin, rather melancholy looking young man, who has just seen his four-and-twentieth birthday.

'Veronicas down again one-eighth!' mutters Mrs Rivers. 'They have been sinking every day for the last fortnight. They used to be a favourite stock with papa. I hope he has not dipped deep in them of late.'

'And they dignify this rubbish with the name of criticism!' cries Gerald in disgust, as he flings away his paper and turns to his cold coffee. 'A more unfair and one-sided attack was never penned. But if Babcombe were to write like an angel, the *Clipper* would stab him all the same; and if he were to write as badly as—as I do, the *Pharos* would be sure to treacle him; so that one always knows what to expect.'

Presently the postman's knock was heard, and a minute later a slatternly maid-of-all-work brought up a letter for Mrs Rivers and a sealed packet for Gerald.

'A letter from papa! I should know his queer cramped hand anywhere,' cried Alice. 'Good news or bad, eh, Gerald?'

'My story back from the *Piccadilly*!' groaned poor Gerald, with a visible lengthening of his already long face. 'Was ever such luck as mine! I shall begin to think soon that I am only fit to break stones by the roadside.'

But his wife did not hear him. She was lost in her letter. Her face paled a little as she read, and presently the tears sprang to her eyes. 'Just like papa!' she cried. 'I might have known what his answer would be. I felt sure at the time that my letters would be of no avail, but I could not rest till I had written. Even though he refuse to see me himself, he might at least let Carry and Grace see me once now and then!' She got up suddenly, and pushing the letter across the table to her husband, she hurried out through the folding-doors that opened into the bedroom. Gerald Rivers took up his wife's letter and read as under:

MY DEAR ALICE—I found your two letters awaiting me on my return from Mentone. As they both refer to the same subject, one answer will do for the two. In both of them you ask me (*implore* is the word used by you) to forgive you. To this I reply that I have nothing to forgive. You are of age, consequently you are the mistress of your own actions, and I have no control over you in any way. But when you ask me to see you, or, if I will not do that, to allow you to visit your sisters, you put the case on an altogether different footing. To both your requests my answer is an emphatic No. In the most important step of your life you have chosen to act in direct opposition to my frequently expressed wishes, and as a matter of course you must put up with the consequences of your folly. One of those consequences is the severance of all ties that bound you to me as a cherished member of my family. You discarded your family of your own free-will, and your family now discard you. Such being the state of affairs between us, I need hardly tell you that any letters you may send in time to come (except in a case of urgent illness, and accompanied by a medical certificate to that effect) will remain unanswered.—Your father,

EDWARD CREWDSON.

P.S.—Since writing the above, a fresh thought has struck me. You know that it was my intention to have given you six thousand pounds as a wedding portion had you married in accordance with my wishes. Now, I promise you that I will overlook the past, and give you the six thousand pounds into the bargain, on the day that you or your husband can come forward and produce another six thousand to put to it. That chance, I give you. A bargain's a bargain. E. C.

'The old boy might as well ask me to jump over the moon as to find six thousand pounds, or six thousand pence either,' said Gerald with a sigh as he laid the letter on the table. 'Alice always said that he was full of eccentric whims and notions, and this proposition of his proves that she was right.'

Presently Mrs Rivers came back into the room, and placing her hands on her husband's shoulders, stooped over and kissed him. She had been crying, and her eyes were still red; but there was a smile on her lips. 'Just like papa, dear,' she

said. 'So inflexible, so self-willed. Nothing can move him when once he has made up his mind.'

'There is one consolation,' said Gerald. 'We are no worse off than we were before.'

'Not a bit.'

'You see what you have brought yourself to through marrying a pauper.'

'Through marrying the dearest and best fellow in the world!' This with another kiss.

'Our future can hardly be said to be *coulour de rose*.'

'Suppose we form ourselves into a committee of ways and means?'

'Agreed.—I vote that you take the chair.' So Alice went and sat down in the big easy-chair opposite her husband.

'Three months ago to-day we were married,' said Alice. 'On that day our joint capital consisted of three hundred pounds. Yesterday I looked at our bank-book and found that we had just one hundred and ninety-nine pounds six and sixpence standing to our credit.'

'So that we have spent a hundred pounds in thirteen weeks?'

'Precisely so. But you must remember that out of that hundred pounds were paid the expenses of our wedding trip.'

'If we go on living at the same rate for six months longer, we shall be bankrupt.'

'Something not far from it.'

'Then the sooner I look out for a situation of some kind, the better for both of us.'

'But long before the six months are at an end, your novel may be brought out, or your comedy accepted, or—'

'My dear Alice,' interrupted Gerald, 'where is the use of our deceiving ourselves any longer? Three months ago we became man and wife. You brought as your dowry three hundred pounds in hard cash—the little fortune left you by your grandmother. I brought— What? A bundle of wretched manuscripts, that were fit only for the butlerman.'

'O Gerald, don't say that!'

'A bundle of wretched manuscripts,' reiterated Gerald bitterly, 'comprising, among other useless matter, a novel and a comedy. I was going to do grand things: to set up in life as a man of letters; to make a name for myself; to earn an easy and lucrative living with my pen. Icarus has come down with a crash. No publisher will offer me a penny for my novel; no manager will read a line of my comedy. I have the consolation of knowing that I have mistaken my vocation; that I am not nearly such a clever fellow as in my folly I fancied myself to be; and that I have been living all this time on my wife's money, for lack of any of my own.'

'O Gerald!'

'In three months I have earned twelve guineas—twelve miserable guineas. During the next three months I may earn as much more, or perhaps nothing at all.'

'You must not lose heart in this way, dear. What are three months? A very little time indeed. Remember how *Jane Eyre* was hawked about from one publisher to another before any one could be found to accept it.'

Gerald shook his head. 'My dear Alice, your husband is not a man of genius, and no one knows that better than yourself. I made the mistake,

common enough, I daresay, among young men who have an itch for scribbling, of believing that the world would appraise my literary wares at the same value that I set on them myself. Three months in London, three months among publishers and managers, have sufficed to undeceive me once and for ever. The lesson has been a sharp one; but I hope I am man enough to own that I think it has done me good.'

'How bitterly you speak, dear! What can I say to comfort you?'

Gerald rose from his chair and crossing to where his wife was seated, he took her hand and pressed it to his lips. 'You are my comfort now and ever,' he said. Then, with his shoulders resting against the chimney-piece, he went back to what he had been talking about. 'Another fact my lesson has taught me,' he said, 'and that is, that there is no present prospect—and whether there is one in the future seems highly problematical—of my being able to keep you and myself, by the proceeds of my pen, in anything more than the most abject pauperism. Such being the state of affairs, you cannot fail to agree with me as to the absolute necessity that exists for my at once settling about some other mode of earning a living. The only question is: What is that mode to be? In other words, what am I fit for?'

'What are you fit for, indeed! Why, anything and everything. With your abilities—'

'My abilities, forsooth! Where are they? In what do they consist? Would the exercise of them in any direction bring me in a hundred a year? Really, Mr Chairman, really you are most unpractical this morning, and wanting in your usual sagacity.'

'You don't know what you can do till you try, dear. Your abilities have never been properly put to the test.'

'There's the mischief of it. If my uncle, instead of bringing me up to a life of idleness, and luring me on with the hope of one day being his heir, had insisted on my being taught some decent trade or profession, I should not be in the predicament in which I find myself now. Seriously, *cara mia*, what am I fit for? I know nothing; have been taught nothing; and have no special aptitude—unless it be for a little foolish scribbling—by means of which, as already proved, I might perhaps earn enough to find you in gloves and myself in cigars. But where is the bread-and-cheese to come from?'

'We have several months before us yet, dear, during which we can look out and consider what it will be best for us to do.'

'And in the meantime your money—yours, Alice—which ought to have been put away untouched, is melting day by day. And there's a sting in knowing that.'

'You foolish Gerald! As if both my money and I were not your own to do as you like with!—How would it be if we went into less expensive lodgings? These rooms are very dear.'

'What are these rooms in comparison with the home you gave up for my sake?' He put his arms suddenly round his wife's neck and kissed her. 'Something must be done and at once; but what that something must be, I know no more than the man in the moon. You with your clear head must try to think for me. I will leave you now. I am going to the Museum to get up my

references for an article I intend writing for *Mayfair*.'

Left alone, Mrs Rivers had another little cry all to herself. Then she bathed her face, and after that she took up her father's letter and read it through slowly and carefully. 'Six thousand pounds!' she murmured to herself. 'If I could but take him that, he would forgive me, and put another six thousand to it. How he must have laughed to himself as he wrote those words, knowing how utterly unlikely it was that such a miracle should ever happen!'

Ordinarily one of the most active of young housewives—if a lady who merely occupies furnished apartments can be called a housewife—Mrs Rivers, this morning, never stirred out of her easy-chair till Gerald came home to luncheon. She put away her father's letter as her husband opened the door. 'Gerald, dear, do you know anything about the electric telegraph?' was her first question.

'Theoretically I know something of it from books; practically, I know nothing.'

'Then you could not send a message by it, say from one station to another?'

'Certainly not; not if my life depended on it.'

'But you could learn?'

'I suppose so, should the necessity for my doing so ever arise.'

'I wish you would learn.'

'With all my heart, if you particularly wish me to do so. Though I certainly fail to see in what way such knowledge could ever be of use to me.'

'It may be of use to you—of very great use; and I want you to begin to take lessons to-morrow. I see from the newspapers that there are one or two places where telegraphy is taught as a regular branch of knowledge, so that it need not take you long to learn.'

'Good. But may I ask?'

'Nothing at present. Like a good little boy, you must shut your eyes and open your mouth, and see what your wife will give you.'

One afternoon, some two months later, Gerald Rivers put into the hands of his wife a certificate of proficiency from the school of telegraphy, at which he had been taking lessons for several weeks past. Alice's eyes sparkled as she read it. 'To-morrow morning, dear,' she said, 'I shall go and see my god-father, Sir Charles Stopford.'

#### CHAPTER II.

'Why now! What, what! Just say that over again, will you?'

The speaker was Sir Charles Stopford, and the person spoken to was his god-daughter, Mrs Rivers. Sir Charles was a City magnate who had been knighted during his mayoralty some years previously. He had been very fond of Alice, in a god-fatherly sort of way, and had been greatly shocked by the news of her mésalliance. This was the first time they had met since that deplorable event.

'Just say that over again, will you?' repeated Sir Charles.

'You are chairman of the Easterham Junction Railway, and in that capacity you can doubtless do what you like on the line.'

'Quite a mistake, my dear—quite a mistake. There are three or four members of the Board—I won't mention names—who are no better than stupid asses.'

'But the favour I want you to do for me is a very trifling one, and such as there can be no difficulty about. It is simply to ask of you that my husband may be appointed station-master at Leaswood Station.'

'What, what! Station-master at Leaswood—your husband? Why now, that's the station for Brookfield, your father's place.'

'Precisely so. That is the very reason—its proximity to Brookfield—why I want you to give my husband the appointment.'

'Ay, ay! I see now; I see. Letters having proved of no avail, you think that if you and your husband are down at Leaswood, you will have an opportunity of waylaying papa as he steps out of the train, and of going down on your knees and begging his forgiveness there and then. A pretty picture, and one that I should like to see!'

'How absurdly you talk, god-papa! I shall not appear in the matter at all. Everybody knows me at Leaswood, and that would never do. The last thing in the world that I should want papa to know would be that Gerald was station-master there.'

'But the name, *ma petite*, the name. Why now, your father would be sure to suspect something from that.'

'Gerald has three names. His full name is Gerald Hunstone Rivers. He would go down to Leaswood simply as Mr Hunstone.'

'There's a scheming little brain for you! I always said it was a pity you were not born a boy; so bright and sharp and all that. You're planning something now—a surprise or something. Well, well.—Mr Hunstone, eh? But there are other difficulties in the way of which I have not yet spoken.'

'What difficulties, god-papa?'

'Why, in the first place, the man whom we have now got at Leaswood is a very good fellow, and we are quite satisfied with him; and under such circumstances we don't care to remove a man.'

'Promote him. Give him more money, and send him elsewhere.'

'Well now. That's your idea. Not so bad. No, no! But even granting that we found or made a vacancy for your husband, he knows nothing of railway-work, and we dare not appoint a man who is ignorant of his duties, to the important post of station-master. In case of an accident, how could we justify ourselves?'

'My husband has an excellent knowledge of telegraphy, so that one great difficulty is at once obviated. And as for the mechanical routine of railway-work, why not put him for a month under the tuition of the man who is at present at Leaswood; and if at the end of that time, Gerald hasn't acquired a competent knowledge of his duties, I'll never call him husband of mine again.'

'Why now. Listen to her. Just like her father. No difficulties allowed to stand in her way. But really now, I don't know what to say.'

'There's no occasion, god-papa, for you to say

another word. I look upon the matter as finally settled. I shall bring Gerald to see you to-morrow morning, and you will send him down to get initiated into his new duties as soon as possible.' She went over and kissed him, and then sat down on his knee, as she had done many a time when a girl.

'Pon my word, there's no putting you off,' he said. 'But what a sad foolish thing that marriage of yours was. I was never more astounded in my life than when I heard of it.'

'A sad foolish thing was it, god-papa?' asked Alice quietly. 'That depends altogether on the point of view from which you look at it. To me, now, it seemed the wisest and most sensible thing that I could do: to marry the one person in the world whom I felt I could love, and who, I was convinced, loved me in return. How much more sad and foolish it would have been had I not made sure of my happiness when it lay there ready to my hand!'

'Ah, well, well. You view everything through Love's rose-coloured spectacles. But it's a colour that soon fades—won't stand the wear and tear of everyday life.—So papa won't forgive you, eh? I cannot wonder at it.'

'He will forgive me when I go to him with six thousand pounds in one hand, and my husband in the other.'

'So, so. He's fixed his price, has he? Just like him. But there's not much chance of your husband saving six thousand pounds while he's station-master at Leaswood, eh, now?'

'No; I suppose not,' said Alice as she rose to go. 'But I don't forget a certain favourite proverb of yours: "There are more ways of killing a dog than hanging him." And I don't despair.'

#### SOME EXPERIENCES OF AN IRISH DOCTOR.

Do not fear, kind reader, that I am about to inflict upon you any 'interesting cases' with their symptoms and treatment, or any dry or technical details, such as find their proper place in the *British Medical Journal* and kindred publications. No indeed. I mean to keep as clear as I can of strictly professional matters. My purpose is merely to mention some of the difficulties which a doctor is likely to meet with—at least in my part of the world—and for which his college training and practice in the hospitals hardly prepare him; difficulties arising from the habits and prejudices of the persons he has to deal with, and the nature of which will, I believe, be made sufficiently clear by the few illustrations I shall give.

I am the dispensary doctor of Kilmany, a place in one of the northern counties of Ireland. The district under my charge is a rather extensive one, mountainous, and with a large number of poor persons in it. To these it is my duty, on receiving the proper ticket, to give the necessary advice and medicines; and it is of my difficulties amongst them principally that I intend to speak. There are two kinds of tickets or 'lines' issued by members of the dispensary committee—the 'black line' and the 'red line.' The black line entitles the patient presenting it at the proper time at the dispensary, to have his case considered and the proper medicine supplied to him. The red line requires the doctor to attend at the

patient's home. Now the first thing is of course to find out what is the matter with the applicant for medical aid. Take the case of a black line. If the patient attends in person, as he ought, well then, there is a chance—not by any means a certainty—of finding this out. But suppose a messenger is sent with the line, then you have to trust to description, and now difficulties begin. 'What is the matter?' you ask. Well, suppose the answer is: 'It's a water-brash, doctor,' or 'It's the hives,' then you have something to go on, always supposing that you can trust your informant. But the case is not so clear when you are told that it is a 'wind-brash' or the black hives; and the matter becomes more obscure if possible, when in the latter case it is added that they have 'struck in about the heart,' a most dangerous symptom as it is thought; or it may be 'a narvous wind' the patient complains of, the worst 'narvous winds' being those which 'work about the head.'

There is no medical work in existence treating of these diseases. But now, suppose you are so fortunate as to know, for example, what black hives are, and that you are able to accept the statement that they have struck in about the heart, even still the course is not clear. You have to deal with some very vague notions of anatomy. If it is a leg or an arm, a foot or a finger that is mentioned, you can trust so far, but not much further. Take that word 'heart,' for example. I remember Paddy Doyle telling me one morning—Paddy was a handy fellow who used to do odd jobs for me about the house and garden—that his father had bought a calf in Ballyboo Fair, but that he feared it would do little good with him, as it had got straws, he thought, in its heart.

'Straws in its heart!' I exclaimed. 'What nonsense! How could straws get there? And if they did, the calf would not live five minutes.'

'O yes,' he replied; 'plenty of them has straws in the heart; but it's rare that they do any good.'

I was not going to argue such a matter with Paddy, and said no more. But two days after he informed me that the calf had died, and that on cutting it open they had found, as they suspected, straws in its heart; adding that 'it's ill done to buy a calf you are not acquaint with, for it's few knows what's in the inside of a strange baste.' After a few questions, I found that it was the stomach Paddy meant, and that the word 'heart' was used in a general kind of way for the inside, the centre—as we speak of the heart of a tree.

But suppose it is a red line, or that the patient himself has brought the black one, your difficulties though lessened have not disappeared.

'What is wrong with you?' I asked of Jack Scrimgeour, to whose house I had gone to see him.

'Aren't you the doctor?' he replied in a surly tone.

'Yes; of course I am,' I answered.

'Well, of course I won't tell you,' he rejoined; 'that's just what I sent for you to tell me.'

A case such as this, where the patient refuses to give you any information, is, I confess, a rare one. Generally the sufferer is communicative enough, the difficulty being to make out the meaning of the strange expressions and illustrations used. Sometimes one meets with quite 'a wealth of description.'



'What's the matter with you, Mrs M'Crea?' I asked a wiry and active old woman whom I was visiting.

'Augh! Is it what's the matter with me, doctor dear, that I'm to tell you? A dale easier I'd find it to tell you what's not the matter with me—I'm just all wrong thegither.'

'Well, but is there a pain anywhere? Come, tell me how you feel,' I said.

'Is it how do I feel, doctor?' she answered. 'I can hardly spake to tell you; but I just feel a-rugging an' a-tugging, an' a-withering an' a-squeezing, an' a-roasting an' a-swamping, an' gif I were a-carding.'

I am happy to say that Mrs M'Crea recovered from a sickness of which these were the alarming symptoms.

But now suppose you have discovered exactly what it is that is wrong with your patient, that you have prescribed the proper remedies, that you have given your instructions clearly, and have taken care to see that they were understood. Your course is clear now, you think. No mistake could be greater. I do not speak of the ordinary errors, neglect or carelessness, which hinder the means used from taking proper effect. But there are disturbing elements, which probably you have omitted altogether from your calculations. You have given such and such medicines. Well, how do you know who will take those medicines, or whether any one will? Shortly after coming to Kilmany, my eyes were rather opened on this subject. It was the day for attending at the dispensary. I had for some hours been giving out the proper medicines to those present. The hour for closing had come, and I had left the place, and was walking through the village towards my house. Suddenly a heavy shower came on. I had no umbrella, and turned for shelter into an archway, at the further end of which there was a chest, on which I seated myself. I had not been a couple of minutes there when two of my patients, who had just come from the dispensary, entered the archway for the same purpose. As the end where I sat was dark, they did not see me, and turning their backs towards me, they began to talk.

'Well, Jinny, what do you think of the new doctor?'

'Sorra a much I think of him at all, Peggy! He would not stand to hear the half of my complaint, and he gave me the wrong medicine entirely. What was it he gave you, Peggy?'

'It's a bottle, Jinny. I'm to take it three times a day, he says. There it is; and it's a poor kind of smell it has about it. I could him it were pills I wanted, and that bottles never done me any good!'

'Well, it's pills he's give me,' said the other, 'and I can't take them at all. But I can take a bottle rightly. I'm thinking we'll swop. Fien a bit wiser the doctor'll be;' and they exchanged their medicine then and there. The shower was over; Peggy and Jinny were leaving the archway without having discovered me, the former saying as she went out: 'I suppose I'd best take the pills three times a day, the way the bottle was to be took.' They were rather startled by hearing me remark that it would be as well to follow the doctor's advice on the point.

Administering the wrong medicine is of course

a more dangerous proceeding than merely failing to administer the right one; though this is bad enough, and very trying to the temper of any doctor who is anxious about and interested in his cases. I may mention an instance of this which occurred also shortly after I came to Kilmany. Old Mulloy, whose house was about four miles distant from the village, held a small farm, valuable enough, however, to raise him above the class of persons entitled to receive medical aid gratuitously. One of his daughters—Marianne, a girl of about eighteen or twenty years of age—was seriously ill. I had prescribed for her, and I called a few days after to see how she was getting on. As I entered the house I saw several members of the family sitting round the fire in the kitchen. They looked up, but did not move from their seats, or shew any of that politeness which one meets with usually even in the houses of the poorest. I thought their conduct strange; however I inquired how the girl was. No answer. So I asked again: 'How's Marianne to-day?'

'Umph!' said the father in a gruff voice without looking up. 'Not much better.'

'What!' I said; 'is there no improvement?'

'Sorra a bit!' was the reply in the same sulky tone.

'How's that?' I asked. 'Did she take the medicine?'

Again no answer. I repeated the question.

'Troth and she did not, doctor,' the father replied with emphasis.

'And why was that?' I inquired.

Then Mulloy rose up, and with an expression of indignation on his face he said: 'Biddy, fetch out that cat.'

Biddy did as she was told—at least she opened the door of a cupboard that was in the wall, and there bounced out of it something like a half-roasted hare; an animal without a bit of fur on its body, and of a dull patchy slate-colour. As it fled with something between a yell and a mew across the floor and out of the house, old Mulloy pointed sternly towards it and said: 'No! by the blessing of Providence we tried your powders upon the cat, or that's the way our Marianne would have been this day, if she had taken what you sent her!'

Sometimes the error is in the opposite direction. If the medicine is approved of, it will often be given to any other member of the family who happens to be unwell; such trifling considerations as age, sex, or even the nature of the sickness being set aside. I remember the case of an old woman who was suffering from a chronic affection of the throat. I had given her a large bottle full of, fortunately, a very innocent preparation, a teaspoonful of which was to be taken when the cough was troublesome. There was enough of the medicine in the bottle to have lasted for a month. I was therefore somewhat astonished when, two days after, her daughter appeared at the dispensary, and setting down the empty bottle, requested that it might be refilled.

'It has not begun to operate yet, doctor,' she observed; 'which mother thinks is strange, for she has give it every fair play; she has took it morning, noon, and night since you sent it. Sorra a bite she ates but she drinks the mixture with it. She supped it with her broghen and took it in her tay!'

This is an instance of a practice common enough

of using the medicine received, in a way never interdicted by the doctor. I shall give another example of a somewhat different kind.

One morning I remarked that there was an unusually large number of persons in the waiting-room of the dispensary, many of them fine blooming girls, who looked as unlike persons requiring the physician as possible.

'What do you want, Maggie?' I asked of the first of these who presented herself.

'Mother sent me,' she said, dropping a courtesy, 'for a couple of doses of oil;' and she handed me a small bottle, which I filled.

To my surprise they all wanted the same. 'A little oil, doctor, if you please.' Well, castor-oil is an innocent medicine, and not likely, I thought, to be used as an article of diet. So I filled each of the bottles with the oil, wondering much what sort of epidemic this was that seemed to have at once attacked so many families. Next Sunday, on coming into the village church the mystery was solved. There was an unmistakable odour in the air, and the unusually sleek hair of many of the boys and girls bore witness to the use the oil had been put to. The next dispensary day there was quite a crowd in the waiting-room, evidently wanting oil. I was prepared for this, and announced that no persons should receive castor-oil who did not require it for their own use, and that as this was a medicine for internal and not external use, the applicant must *swallow it in my presence*. One half of my visitors left the waiting-room that day without coming into the dispensary to see me; and as they passed the window, I could perceive that in spite of their disappointment they enjoyed the joke.

There is one idea that any physician taking charge of the dispensary district of Kilmany would do well to get rid of—I mean the notion that he will be thought to understand his own business better than his unprofessional neighbours. Quite the contrary. The doctor's bottles will probably be submitted to the clergyman for approval, the parson's doctrines indeed being in return laid before the doctor to decide whether they are orthodox, if he will take upon himself such an office. But questions both of divinity and medical science will have eventually to be decided by old Mrs Featherstone. 'I would like to hear what Mrs Featherstone has to say on that point,' is the remark when the Sunday sermon is thought to have contained any dubious statement of doctrine. 'Doctors is well enough, Mrs Walker,' I happened to hear a woman remark to her neighbour, who was coming to the dispensary for the medicine her husband required—'doctors is well enough when there's nothing serious; but I wad recommend you when he's that bad, to do nothing till Mrs Featherstone has seen him.' On another occasion to the question: 'Has the doctor seen poor Biddy?' the answer was: 'Troth no, then; nor he won't. My daughter's too delicate for the doctor.'

The following letter, addressed to the clergyman of the parish by a patient of mine, whose strong constitution had brought her safely through an attack of typhus fever, will shew that this feeling of distrust is not confined always to the poorest class. Mrs Smart was well-to-do in the world, possessing and managing successfully one of the largest farms in the district. Hearing that

the clergyman was unwell, she wrote to him as follows:

'REVEREND SIR—Being informed that you are ill, I take the liberty of writing, lest it should be as subscriber fears a case of fever, in the hopes that the experience of a typhus-fever patient may be acceptable. In the year 1865, Ann Smart suffered under typhus fever for eight weeks; the malady raged unabated; patient hot as fire within, extremities cold as ice; Dr M—— in constant attendance; took none of his medicine, but paid his bill. A basin of oatmeal flummery stood by; likewise a bowl of butter-milk qualified with two parts of water. Alternate spoonfuls supported the patient and cooled the fever. Treatment was successful, which, that it may so prove in your case, and that long you may be spared to fulfil the duties of your sacred office, is the prayer of subscriber,  
ANN SMART.'

In what tendency of our nature this distrust of what is professional has its origin, I shall not inquire. Evidence of such a feeling is common enough, at least among a large class of persons in Kilmany dispensary district.

I give another instance. A patient of mine—poor old Tom Jackson—was ill of dropsy. His friends did not think well of my method of dealing with the case. In a neighbouring town there was one Peter Blain, who kept a small shop, in which tea, tobacco, some drugs, paints, garden-seeds, and rat-poison were sold. Dr Blain he was called, though he had no claim to such a designation except what was derived from selling quack medicines and rat-poison. To this person poor Jackson's friends went and explained the symptoms of the disease, the worst being, as they said, want of sleep. To remedy this, 'Dr' Blain gave them a box of opium pills, a number of which they administered on returning home. In the middle of the night I was called up to see Jackson, who they told me was dying. I perceived at once that the man had been poisoned, and on asking what he had taken, the remaining pills were shewn to me. I did all I could to save his life; getting rid of as much as possible of the poison by means of a stomach-pump; but the patient had been in a very weak and prostrate condition, and he never rallied. There was an inquest, the coroner's jury being composed of small farmers in the neighbourhood, who happened to hold some rather curious religious opinions. In the verdict they agreed upon, it was stated that no blame attached to Dr Blain, but that I, Dr M——, was guilty of manslaughter, for using a horrible engine nowhere sanctioned in Scripture!

I have mentioned the 'red line.' Most of my professional brethren in this country, however little given to speaking on other subjects, could, I fancy, be eloquent on this; for the red line interrupts all a doctor's plans and occupations; it is sure to come upon him at the most unexpected times and in the most annoying manner. The dispensary doctor lives with the red line like the sword of Damocles ever hanging over him, with this difference, that while the sword did not come down, the red line is perpetually doing so. You come in late in the evening, wearied with your day's work, and hungry. You have been looking forward to a comfortable dinner, the arm-

chair by the fire, and a pleasant book; but instead there is a red line upon the hall-table; or you have gone to bed and have fallen into your first sound sleep, when a thundering knock comes to the door, and before you are well awake you understand that the red line has arrived. Of course these red lines are necessary, but sometimes they come under circumstances that would try the best regulated temper. I remember one dreary winter's evening reaching home tired and wet; it had been a bleak cold day, with showers of hail and rain mixed, and a cutting northerly wind. On coming into the hall, I saw the inevitable red line, with 'Urgent' written on it. The place I was summoned to was five or six miles off, and the road to it bad and hilly. There was, however, nothing for it but for man and horse, tired as they were, to start at once. It was quite dark when I reached the house, a wretched hovel with but two rooms. I had had to leave my car some distance off and make my way to it on foot. The father and mother and some grown-up children were sitting round the fire as I entered.

'How's Molly?' I asked at once, for I was in a hurry to get home again.

'Augh! doctor dear, is that you?' they said. 'But you've got the sore night to come out; you'll be starved wid the cowl.'

'Well, but how's Molly?' I asked again. 'I'd like to see her at once.'

'Augh! is it Molly? Troth, she's bad enough, and glad she'll be to see you, doctor. But take a sate at the fire, an' just warm yoursel,' said the mother, offering me the solitary chair the house possessed.

'O no; thank you; I can't wait. I will just see what ails Molly,' I replied, going towards the door of the bedroom.

'Oh, she's not there, doctor,' they said; 'you'll see her after a bit.'

'Where in the world is she?' I exclaimed. 'She's not out such a night as this?'

'Troth then, she just is, doctor,' was the reply.

'Sure, we never thought you'd come out this evening. But she'll be back in half an hour; she just went up a while ago to the mountain for a back-load of turf.'

Some weeks I think elapsed before this affair began to appear to me in a comical light.

These few anecdotes, as they are strictly true, may serve, so far as they go, as indications of characters and mental peculiarities not unfrequently to be met with amongst dispensary patients in the north of Ireland. When I came to take charge of the Kilmany district, my predecessor was still in the place. I remember the evening before he left we walked up to the little church upon the hill, from which there was a good view of the country round. 'There have been many changes here,' he remarked, 'since first I knew the place. And it's not so very long ago either. Would you believe it now?' he asked. 'There was hardly a grave in that churchyard when I came here, and see how full it is now!'

'True for you, doctor,' the sexton, who was standing near, remarked; 'and you attended a most every one of them! You have not been idle since you came to us, doctor, that's certain!' There was a twinkle in the old sexton's eye as he spoke, and though he kept quite grave, we both laughed heartily. But perhaps the difficulties in

the way of successful practice which I have illustrated rather than described, may excuse the dispensary doctor from at least a portion of the blame.

### MAGIC MIRRORS.

AMONG the most curious examples of ancient Chinese metal-work must be reckoned 'magic mirrors,' whose mysterious properties have puzzled even the learned and scientific for ages past. Both the Chinese and Japanese have long been famous for their mirrors, some specimens of which are to be seen in the Museum of the School of Mines in Jermyn Street, London; but it is only a small percentage which possess, as the catalogue informs us, 'the very remarkable property of reflecting from their polished surface the figure which is wrought upon the back.'

Whether Chinese or Japanese, and whether indued with this magic power or not, the bronze mirror is usually circular in shape, and from three to twelve inches in diameter, the face being highly polished; while the back is ornamented with various designs, embossed, inlaid, or engraved in the metal. So far there is nothing remarkable about it; and though very light and convenient for use at the toilet-table, it would not attract much attention; but if the mirror be a 'magic' one, and held in the sunlight, with its face towards a white wall or screen, it will reflect the various designs graven on the back, which will appear either as shadows upon a light ground or as lights upon a dark ground, although no scrutiny of the polished surface, however close, will enable one to detect the smallest trace of them there. The effect is extremely startling even to an educated person, and it is hardly wonderful that the uneducated should be disposed to regard it as decidedly 'uncanny.' One of the few magic mirrors now in Europe belongs to Herr Senter, and is thus described by the German writer Herr Carus Sterne.

'The mirror is of yellowish bronze, the face slightly convex, and covered with a thin coating of silvery-looking metal, which is very highly polished, and reflects with the utmost distinctness every object presented to it. The handle, also of metal, is covered with bamboo; and the whole thing is so extremely light and comfortable to use, that as a hand-glass it is simply perfection. The back of the mirror is covered with designs of the usual description in low relief on a roughly granulated ground, which consist of a figure in the shape of a tiger, of the famous Chinese dragon Lung, resting beneath the shade of a brier in full blossom, with a few bamboo-canes growing near. Above the head of the tiger are engraved certain characters, which stand out in much bolder relief than any other part of the design, and constitute the well-known sign and symbol of the sacred dragon. To the left is a column of Chinese writing, probably a charm or the expression of some good wish; for a bronze mirror is a very usual present, and is supposed to insure health, beauty, and happiness to the recipient. One belonging to Baron La Grange, and described by M. Stanislaus Julien, bore the words *cheou*, long life, and *fo*, happiness.'

Herr Senter's mirror, when held in the sunshine as we have described, reflects from its

polished surface the tiger and the rest of the design with great distinctness; the figures, which it must be remembered are engraved on the back, appearing as bright lights on a shaded background.

The Chinese call these toys *Théou-Kouang-Kien*, 'mirrors which let the light through;' and as the rare specimens which exhibit this phenomenon in perfection are worth from ten to twenty per cent. more than the others, the workmen are not at all anxious to enlighten either foreigners or even their own countrymen as to the way in which it is produced. Accordingly, there is little trustworthy information to be obtained from Chinese writers on the subject, though various theories have from time to time been advanced in explanation.

It is only quite recently that the mystery respecting them has been solved, and this perhaps because people have experimented upon the various ways in which the mirrors might be manufactured. It has been found that there are several methods by which it is possible to cause differences in the reflection from a metal surface, which shall be visible only in the reflection and not as directly detected by the eye. It is found that designs etched, engraved, or stamped on a plate of metal, and then rubbed down and polished till they have entirely disappeared from sight, will still come out in the reflection; and a similar result has been obtained by tracing a design with transparent varnish on the back of a plate of glass. Old coins exhibit analogous appearances; and most collectors know that old worn specimens, if placed on a metal plate in the dark, and brought to a red-heat, will exhibit the design and inscription which had previously become obliterated. A brass-worker who had heard Professor Pepper lecture on this subject at the Polytechnic, brought him some time afterwards an imitation of a magic mirror made by himself. He had taken a plate of common brass, and stamped it with an engraved die three times, in exactly the same spot, polishing it down again each time; and after the third operation, the design, though not to be detected by any method of direct examination, yet came out plainly in the reflection. Both Sir David Brewster and Sir Charles Wheatstone were of opinion that the phenomenon of the magic mirror was produced in some such way as this, and that the figures on the back were merely used for the purpose of making the observer deceive himself, and had absolutely no connection with the reflection. This theory, however, is now upset by the discovery of a remarkable fact first observed by Professor Atkinson of Japan—namely, that a mark made with a blunt nail on the back of one of these mirrors, though producing no visible effect upon the polished face, was yet reflected as a bright line on the screen, when the mirror was held up in the sunshine!

Japan is, even more than China, the land of mirrors; and as mirror-worship forms part of the popular religion, and plays so important a part in the national life, it might be thought there would be little difficulty in investigating their 'magic' properties. But this is not the case; for the Japanese seem to know less about magic mirrors than any one else, and are apparently ignorant as to how the effect is produced. Professor Ayrton has, however, successfully solved the mystery, and

has proved by a series of experiments, too long to detail here, that the reflections are caused by certain imperceptible inequalities in the curvature of the polished surface. No thick mirror reflects the design on the back; not one of the many beautiful mirrors exhibited at the National Exhibition of Japan in 1877 did so in the slightest degree; yet the patterns were not less well executed than on inferior specimens; but the mirrors were far thicker, and their surfaces much less convex. On further investigation he found that in order to give the desired amount of convexity to their mirrors, the Japanese place them on a board, face uppermost, and indent the surface with a blunt iron called a 'distorting rod.' Several series of scratches are made in different directions, the mirror being during the operation visibly concave, though eventually becoming convex. The metal receives what is technically called a 'buckle,' and springs back again so as to become convex directly the pressure of the rod is removed. Naturally, the thicker parts of the metal would be less impressionable than the thinner, and might even not spring back at all, but remain concave. After being polished with whetstones and charcoal, to remove all trace of the scratches, the face is finally rubbed over with a mercury amalgam.

We must confess that, even with the proof before us, it does seem marvellous that inequalities so small that the eye entirely fails to detect them, should be able to cast upon the screen such sharp and clear reflections as are witnessed in a good specimen of the magic mirror; but so it undoubtedly is; and the phenomenon receives further confirmation from Professor Ayrton, who thus concludes his lecture: 'It appears then, contrary to what is commonly believed, that the magic of the Eastern mirror results from no subtle trick on the part of the maker, from no inlaying of other metals or hardening of portions by stamping, but merely arises from the natural property possessed by certain thin bronze of buckling under a bending stress, so as to remain strained in the opposite directions after the stress is removed. And this stress is applied partly by the distorting rod, and partly by the subsequent polishing, which in an exactly similar way tends to make the thinner parts more convex than the thicker.' So then, as often as not, the 'magic' properties which have caused so much perplexity may be, at least in Japan, the result of pure unconscious accident.

#### LOVE'S CALL.

Soft tender stars sedate and sweet  
Round weary Earth's pale pillow press;  
Night cloaks her at the golden feet,  
And they are shod with silentness.

Tranced in a weird colossal dream,  
The mountains shadowy arms outflung;  
Around, the silent forests gleam,  
And every leaf is listening.

What distant call? What sudden-stirred  
Echoing thrill from breast to brow?  
Was it the nightingale I heard?  
Or was it, best beloved, thou?

EMANUEL DEUTSCH.

Printed and Published by W. & R. CHAMBERS, 47 Paternoster Row, LONDON, and 339 High Street, EDINBURGH.